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(54) Optical signal power detection with signature bit pattern in WDM systems

(57) The power of an optical signal ( $s_1$ ) travelling on a channel ( $\lambda_1$ ) of a WDM transmission system, is measured using a signature bit pattern ( $s_{BP1}$ ) which is inserted in the frame of the optical signal ( $s_1$ ). The power level of  $s_{BP1}$  is adjusted at the launching point to a predetermined ratio ( $m$ ) with the power of the optical signal. At a point of interest, the fiber is tapped and a fraction of

the tapped signal, that includes a corresponding fraction of  $s_{BP1}$ , is converted to an electrical signal. The fraction of  $s_{BP1}$  is extracted from the electrical signal and power of  $s_{BP1}$  is measured. This gives the optical power of  $s_1$  as ( $m$ ) is known and also the calibration constant for the respective channel ( $\lambda_1$ ) is known. The method can be applied for any and all channels of the WDM transmission system.

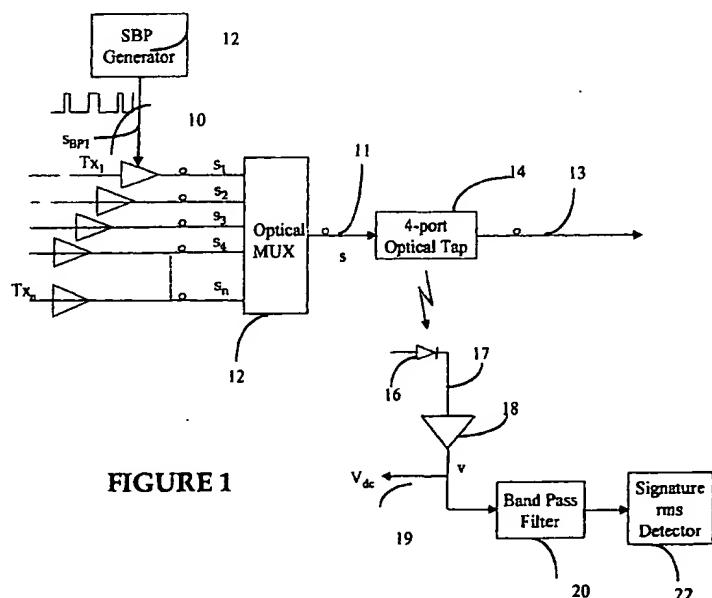


FIGURE 1

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## EUROPEAN SEARCH REPORT

Application Number  
EP 98 30 8286

DOCUMENTS CONSIDERED TO BE RELEVANT			CLASSIFICATION OF THE APPLICATION (Int.Cl.6)						
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim							
D,A	US 5 513 029 A (ROBERTS KIM B) 30 April 1996 (1996-04-30) * abstract * * column 7, line 15 - column 8, line 5 *	1,4,5	H04B10/08 H04J14/02						
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			TECHNICAL FIELDS SEARCHED (Int.Cl.6)						
			H04B H04J						
<p>The present search report has been drawn up for all claims</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">Place of search</td> <td style="width: 33%;">Date of completion of the search</td> <td style="width: 33%;">Examiner</td> </tr> <tr> <td>THE HAGUE</td> <td>12 March 2001</td> <td>Ribbe, A</td> </tr> </table>				Place of search	Date of completion of the search	Examiner	THE HAGUE	12 March 2001	Ribbe, A
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CATEGORY OF CITED DOCUMENTS		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document							
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ON EUROPEAN PATENT APPLICATION NO.**

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12-03-2001

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82